

Algebra 2

Unit 3 Review - Chapter 8 - Rational Functions

Name: _____

Date: _____ Pd: _____

Simplify each expression.

1) $\frac{2x^2 + 9x + 9}{x + 1} \div \frac{2x^2 - 5x - 12}{x^2 - 3x - 4} =$

2) $\frac{2x}{x^2 + x - 6} - \frac{3x}{x^2 - 4} =$

3) $\frac{x^2 - x - 6}{x^2 + 6x + 9} \cdot \frac{x + 3}{x^2 - 4} =$

4) $\frac{2x}{x^2 + 5x + 4} + \frac{3x}{3x + 3} =$

Solve each of the following equations. Make sure to find the restricted values.

5) $\frac{2x-3}{5} = \frac{2x-5}{6}$

$x \neq$ _____

$x =$ _____

6) $\frac{4}{x-3} = \frac{2}{x+1} + \frac{16}{x^2-2x-3}$

$x \neq$ _____

$x =$ _____

Find the vertical and horizontal asymptotes for each function.

7) $y = \frac{3x+1}{x-5}$

8) $y = \frac{x+1}{3x^2-11x+6}$

9) $y = \frac{3x^3-4}{4x+1}$

VA: _____

VA: _____

VA: _____

HA: _____

HA: _____

HA: _____

Sketch the graph of each rational function. Show all work.

10) $y = \frac{3}{x}$

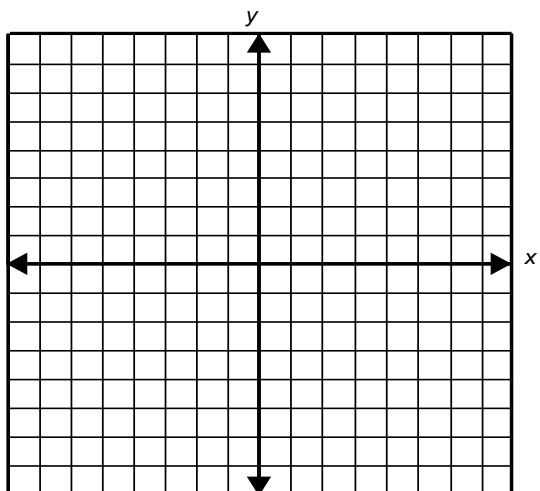
x-int: _____

y-int: _____

VA: _____

HA: _____

x/y chart:



11) $y = \frac{x-5}{x+1}$

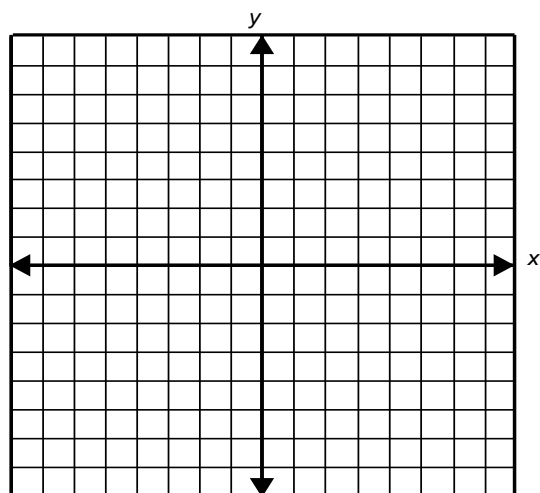
x-int: _____

y-int: _____

VA: _____

HA: _____

x/y chart:



12) $y = \frac{4x}{2x-6}$

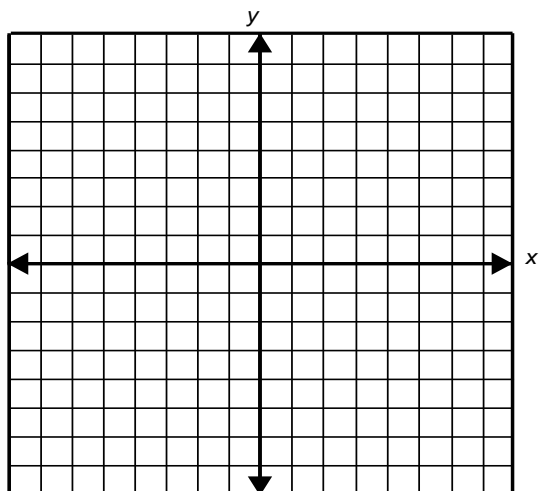
x-int: _____

y-int: _____

VA: _____

HA: _____

x/y chart:



13) $y = \frac{x^2 - 4}{x}$

x-int: _____

y-int: _____

VA: _____

HA: _____

x/y chart:

